Space Weather Forecast

Issued on Friday 17 January 2025 at 01:12 Local

This forecast provides a four-day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: Chance of isolated Moderate class flares.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Low with frequent low common class flares, with the peak flare from a new region in the northwest. This region rapidly emerged during this period, and has developed into a magnetically complex region. Slow growth has also been observed in the large region in a moderately complex region in the southeast. The largest region on the disc, in the northeast, showed some slight decline in size through the period and has a simple magnetic structure. The remaining four regions are all smaller and magnetically simple.

No Earth-bound coronal mass ejections (CMEs) were observed in available imagery.

Solar Wind / Geomagnetic Activity: Ongoing fast wind influence was observed. Solar wind speeds were mainly slightly elevated, between 480-500 km/s at first, with brief peaks towards 550km/s. During the second half of the day solar winds speeds declined slightly to generally 420-450 km/s. The strength of the solar wind's magnetic field was Weak. The north-south component of the magnetic field fluctuated Weakly. Geomagnetic activity was mainly Quiet to Unsettled, but with one Active interval 16/1800-2100 UTC.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) was at background.

Four-Day Space Weather Forecast Summary

Solar Activity: Low to Moderate activity is expected, with a chance of isolated Moderate class flares. There is a slight chance of a Strong flares.

Solar Wind / Geomagnetic Activity: There are no Earth-directed CMEs. Ongoing coronal hole influence is expected, predominantly from a very elongated coronal hole that stretches out across the southern hemisphere. The associated enhanced solar winds, at slightly elevated to elevated levels, are expected to persist for the rest of the period. Quiet to Unsettled geomagnetic activity is expected with isolated Active intervals. There is a chance of reaching a Minor Storm interval, most likely today and tomorrow (17-18 Jan).

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is expected to persist at background with no Solar Radiation Storms occurring.

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 370 900 0100 Email: enquiries@metoffice.gov.uk

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Geomagnetic Storms

Geomagnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	40	40	20	10
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X-Ray Flares

X-Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 (M Class)	No	50	50	50	50
Very Active	R3-R5 (X Class)	No	10	10	10	10

Solar Radiation Storms (High Energy Protons)

Radiation Storms Probability (Exceedance)	Level ($cm^{-2}sr^{-1}s^{-1}$)	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	5	5	10	10
Very Active	≥ S3 *	No	1	1	1	1
* S3 ≥ 10 MeV ≥ 1000 pfu and/or 50 MeV ≥ 10pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)						

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